Artificial Lawn People

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Abstract

This paper explores a new artificial political ecology through a novel digital methodology. The emotional impacts of the replacement of living turfgrass landscapes with synthetic simulacra are researched via a netnography of animated and polarised online discussion. We investigate how the cultural use of domestic lawns has extended into the creation of non-living artificial lawns and how the environmental values of these new landscapes are debated. Synthetic polymer (plastic) grasses are increasingly being used as alternatives to turfgrass in domestic gardens, changing urban ecologies. We examine the emotional landscapes that are reproduced in online discourse. Paul Robbins showed that a certain suite of behaviours constitutes 'Lawn People'. Here we demonstrate that 'Artificial Lawn People' act in reference to cultural expectations of a 'good' lawn to produce non-living, homogeneous, green and tidy gardens, yet their actions spark fierce criticism from others who do not value this new synthetic nature. Our research involved analysis of 948 online discussion posts, and introduces a secondary notion of 'artificial people' as our subjects were anonymous contributors to virtual public debates on the environment: generating impassioned polyvocal contestation. Mumsnet.com is a space of heated discussion between proponents and opponents of artificial lawns. We identify three topics: i) emotional responses: artificial grass is polarising, and its social value contested; ii) bio-physical affects: plastic fibres impact human and non-human life; and iii) environmental values: turfgrass replacement influences local and global political ecologies. The conclusions shed light on the dynamic relationships between the emotional values of living and non-living landscapes.

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Keywords: Synthetic turf, plastic grass, emotions, netnography, simulacra

Highlights:

- Installation of plastic grass in domestic lawns is changing urban ecologies and social practice generating heated and emotional public debate about local environments.
- We use a netnographic analysis to explore the emotional landscapes produced by artificial lawns.
- Three topics of concern emerged: emotional responses, bio-physical affects and environmental values.

- Artificial lawn people reflect the dynamic and complex relationships between living and non-living objects in domestic space.

Introduction

> Wouldn't it be great if your lawn could look lush, green and well maintained all year round? Wouldn't it be marvellous if the weekly lawn cutting ritual became a thing of a past? Wouldn't it be nice to have your neighbours comment on how lovely your garden looks when they come over for the customary BBQ?
>
> Then you may find yourself considering installing artificial turf in your garden…
>
> TigerTurf, 2018

Human-made materials abound. Ranging in scale from micro-plastic pollutants to the sprawling Great Pacific Ocean Garbage patch, prescient environmental studies focus on the unintended impacts of waste that derives from overconsumption. The evidence base that undergirds these arguments and the emotional resonance of these phenomena are such that talk of human-induced global environmental crises across multiple planetary domains has crossed-over from academic discourse to popular debate (Castree, 2018; Siegle 2018). Life in the Anthropocene is under threat and concern is spreading (Haraway, 2015; Kunkel, 2017), yet these crises and their discussion operate at an abstract global scale. Specific emotional responses to changing socio-natural environments are primarily experienced at local scales through the way people feel about their homes, neighbourhoods, cities and regions; and both shape, and are shaped by, personal and community identities (Brook, 2003; Clayton and Myers, 2009; Roessler, 2012). Consumption choices made at the level of individual landscapes have material impacts and affective responses that are under-explored in environmental studies (Rose, 2017). The proliferation of synthetic materials has enabled consumers to choose to replace living things with artificial substitutes. Here we explore emotional responses to environmental change and shift the focus away from the use of human-made products that unintentionally disrupt biophysical systems to the purposeful replacement of biota with non-living alternatives. New patterns of synthetic

consumption produce new cultural landscapes. In concert with the spread of synthetic materials a new space for popular environmental debate has opened up. The internet has become a place for often distant and hitherto unfamiliar people to engage in discussion about new consumer practices and changes to their neighbourhood environments. A new socio-nature that triggers polarising and emotive debate among anonymous internet users is artificial grass. Some lawns are being changed as the flora that originally defined them is exchanged for non-living simulacra (Francis 2018). Artificial lawn owners are removing living turfgrass from domestic gardens and producing new emotional landscapes both in their local contexts and in wider discursive spaces.

Domestic lawns are very public private spaces. Although lawns may represent a 'deliberate construction of a relationship with nature' (Gross and Lane 2007, p.237), conformity of this relationship is the norm, and it is rare for households to break from established urban ecological behaviours and choose artificial materials in place of turfgrass. They are concerned about the costs, maintenance and appearance of synthetic fibres, the opinions of their neighbours and the potential local and global scale environmental consequences. In domestic gardens people reconcile the converging forces of industrial capitalism, cultural politics, heritage and environmentalism (Mustafa et al. 2010; Robbins and Sharp 2003). The turfgrass lawn is the predominate form of coverage across British domestic and public outdoor spaces and can be extensive, with Ignatieva et al. (2015) estimating that lawns make up around 70-75% of urban green space. They are an everyday landscape aesthetic that symbolises discipline, prosperity, community and citizenship. Lawns are an artefact of the Anthropocene embedded in the fabric of settlements large and small and central to everyday domestic space (Castree 2018; Trudgill et al. 2010; Robbins 2007).

The relationship between people and lawns is emotional. Their formation and maintenance is driven by particular environmental behaviours on the part of their owners, resulting from a suite of psychological motives (Clayton, 2007). Yet these behaviours are more broadly shaped by established lawn cultures. Indeed, in North America the cultural import of lawns is so significant that it led Paul Robbins to argue that they produce 'lawn people': subjects who act in ways mediated by the requirements of maintaining front and back yards (gardens). A suite of urban ecological behaviours stem from tending lawns and 'produces a

111 certain kind of person – a turfgrass subject' (2007 p.xvi). North America's lawns are a
112 product of social and environmental colonialism imported from Northern Europe (Mustafa
113 et al. 2010) and tending turfgrass is a national obsession in the United Kingdom (Lowenthal
114 1991; Trudgill et al. 2010). Domestic lawns developed in lock-step with the growth of the
115 middle-classes and the subsequent global expansion of consumer capitalism (Trentmann,
116 2016). Turfgrass became a fixture in modern culture and a landscape distinct from
117 agricultural spaces and 'wild' sites (Lorimer, 2016). Robbins explored how a living grass lawn
118 produces certain urban ecological behaviour resulting in: 'an act of subjection, not only to
119 the lawn, but also to the ideology of community and the international economy of turf
120 maintenance' (Robbins, 2007;16). Lawn people are constituted in and take meaning from
121 social relations and establish routines of behaviour including cutting, watering and weeding.
122 When social relations change a new urban political ecology will be produced (Loftus, 2012).
123 New patterns of lawn consumption are arising that may accord with, or disrupt, established
124 social practices and identities (Butler, 1997). Alternative plant types (Mustafa et al. 2010)
125 and synthetic materials (Francis 2018) are available for consumers who want to produce
126 different socio-natures or who face bio-physical, economic, temporal or spatial constraints
127 associated with aesthetics, environmental conditions, busy lifestyles and high-density living.
128 As the opening quote implies, a vibrant new form of artificial ground cover is emerging as a
129 viable choice (Bennett, 2009). In this paper we are interested in the emotional impact of
130 non-living artificial lawn landscapes.
131
132 Artificial grass matting is a simulation of grass blades constructed from synthetic polymers
133 (Francis 2018). Turfgrass lawns impose a set of relationships between people, grasses,
134 weeds, animals, chemicals, mowing machinery and the companies that supply goods and
135 services (Robbins, 2007). Synthetic lawns are destabilising prior relationships and
136 establishing new sociocommunal bonds, some of which are common to the familiar
137 turfgrass system and others that are new. When someone decides to use synthetic grass
138 they take on a new identify which we term an 'artificial lawn person'. The Artificial lawn
139 people in our study discussed their identities and environmental management choices
140 online, including how they patronise new businesses, transform gardening practices, cease
141 mowing routines, alter nutrient cycles, disrupt animals that live in (and can defecate on)
142 lawns, and establish new cleaning regimes – brushing, washing and even vacuuming the

polymer blades. Subsequently they relate differently to their lawn people neighbours and other remote observers of their most public private spaces. Some revel in their status as *artificial lawn people*, while others struggle with their new cultural identity. In this article we seek to understand how people, both proponents and opponents, feel about artificial lawns and the emotional effect of becoming an artificial lawn person.

First we consider the changing norms and practices of lawn coverage. Next, we discuss our methodology which introduces a secondary notion of an 'artificial lawn person'; our primary research was based upon a netnographic analysis of 948 online discussion forum posts (Langer and Beckman, 2005). The personas of our subjects may be affected and mannered by the anonymity afforded by online discussion and the advantages, appropriateness and demerits of this research approach in a remote artificial space are critically reflected upon (Bouchard, 2016). Thirdly, we position our contribution within a canonical study of lawn people drawing principally from Robbins (2007), Harris et al. (2013) and Mustafa et al. (2010). The next three sections explore in turn; i) emotional responses to artificial grass, ii) the bio-physical affects, iii) and the environmental values. Finally, the conclusion discusses how artificial grass is a signal example of the consumption of new synthetic materials that replicate biota in the Anthropocene (Haraway 2015; Zalasiewi et al. 2016).

Lawn cultures

The embodying characteristics of lawns have been deeply culturally embedded. Even the etymology of the word itself speaks of a transition from the semi-natural to the forcibly managed. Originally used in sixteenth to eighteenth century English as a term to denote a woodland glade or untilled, grass-covered land, by the mid-eighteenth century 'launes, lawnes and lawns' referred to the closely-mown grassland associated with horticulture (OED 2018); a manicured ecosystem that Miller (1733) notes is best to 'lie open to the neighbouring Country and not pent up with Trees'. Weigert (1994) suggests that a dialectic framework of 'good' and 'bad' lawns drives the social construction of the common form. 'Good' lawns are dominated by dense, soft grasses with an absence of weeds, and maintain a rich, healthy green colour, neatness (the grass is kept short and manicured) and

consistency (homogeneity is good, heterogeneity is bad). These characteristics are associated with wealth, education and implicit moral worth; good neighbours have good lawns. Maintenance of these 'good' characteristics constructs the cultural form and creates social norms of lawn management, which are reinforced and replicated spatially and temporally; even in unsympathetic climatic regions and among diverse social groups (Mustafa et al. 2010).

The environmental impacts of living lawns are well-documented (Ignatieva et al. 2015), including extensive and intensive use of chemicals such as herbicides, pesticides and fertilisers (e.g. Robbins et al. 2001; Robbins and Birkenholtz 2003), relatively (though not uniformly) low value as species habitat (Thompson et al. 2004), abundance of non-native species (Stewart et al. 2009) and release of gases associated with urban heat island effects and climate change (Livesley et al. 2010). Despite this, lawns do provide some ecosystem services, such as recreation and wellbeing, rain infiltration, carbon sequestration; and poor habitat is still habitat (Qian and Follett 2002; Francis, 2018). These services can be enhanced with appropriate changes to management (Ignatieva et al. 2015).

Attempts to change the lawn's cultural form have resulted in social conflict. As Trudgill et al. (2010) note, the 'curious obsessive fetishes of lawn management will not die easily' (p. 179). Robbins (2007) and Weigert (1994, p.87) highlight examples of the use of 'moral coercion, extralegal physical force and legal police power' to enforce norms. Feagan and Ripmeester (2001) note opposing ideologies between residents conforming to established 'good' lawn social norms and those attempting to create more ecologically meaningful habitat in their lawn space. Lawn maintenance is an emotional topic (Harris et al. 2013). Both groups regarded their choice as being more 'pure' (culturally pure 'good lawns' for the former, and organically pure for the latter), and the opposing forms as 'out-of-place'. Further diversification has led to two opposing directions of approach to lawns culture. The first is the development of the living grass-free (or tapestry) lawn, wherein grass monocultures are replaced by a more varied community of perennial (often clonal) forbs that are tolerant of mowing (Smith, 2016). The prevalence of flowering plants in the lawn means that at different times of the year, and dependent on mowing frequency, various patterns and colours of lawn will emerge as the composition of flowers changes (hence the 'tapestry'

effect). Such lawns are not only aesthetically and horticultural interesting, but have ecological benefits. For example, grass-free lawns support a greater diversity of plant species, and phenological variation in flowering and seeding times creates a shifting mosaic of resources for other organisms, particularly for invertebrates and pollinating species (Smith, 2016). Such lawns represent an extension of recent trends in wildlife gardening, which encourage heterogeneity in the wider residential garden, and are most likely to be cultivated by environmentally-conscious lawn owners who 'recognise the connection between the backyard and the broader ecosystem' and are less likely to think of their lawn space as 'an outdoor living room' (Clayton and Myers, 2009, p. 103-104). For those motivated by environmental concerns, or wishing to publicly demonstrate their environmental awareness, grass-free lawns are an 'opportunity to remind people of what [the owners] value in nature' (Clayton and Myers, 2009, p. 104). They also fulfil the lawn owner's intrinsic desires to exercise control over their domestic space (Gross and Lane, 2007), as the successful grass-free lawn requires careful maintenance, further enabling a demonstration of gardening effort and expertise. Grass-free lawns are a pioneering development and an attempt to foreground ecological concerns in the cultural form; yet may be difficult to popularise as traditional 'good' lawn characteristics, driven by social norms, are challenged.

The second emerging approach to lawn culture is the focus of our interest; the utilisation of plastic grass to create artificial lawns as a non-living simulacrum of the desired cultural form (Francis 2018). Plastic grass is also variously termed 'artificial grass' 'artificial turf' and 'synthetic turf', amongst other labels; there is no single established term. It has evolved through three broad generations of design and technology. First generation synthetic turfs were developed in the 1960s, primarily for use on sports pitches, to avoid damage to grass swards and increase durability of playing surfaces. These grasses were made from inflexible nylon or polypropylene, and were both unrealistic and uncomfortable (Stanitski et al. 1974). Second generation synthetic turf was generally composed of longer fibres and had other materials in between, such as sand. The look and feel of these grasses was an improvement on the first generation turf, but their usage was primarily the same. Third generation turf has a range of different designs but is primarily manufactured from polyethylene fibres that are mounted on an expanded polypropylene thatch and have an infill of sand and rubber

crumb (Francis, 2018). These materials both look and feel considerably more like lawn grass, and has resulted in their application to a wide range of domestic and commercial applications around the world. Francis (2018) noted that there are over 100 companies that sell artificial grass in store or online in the UK alone, and that Artiticial-lawn.co.uk (2017) lists 28 artificial lawn suppliers for the UK and Ireland, and 65 globally. There are multiple variations of synthetic grass products, with Trulawn (2017) listing eight different types of artificial grass, varying in fibre type, size, quality and colour. There seems to be a developing market for artificial lawns.

The environmental impacts of artificial lawns are currently unknown (Francis, 2018). It is suggested that some broad environmental benefits may result from the replacement of a living lawn with its plastic counterpart; plastic grass needs no watering, mowing or chemical applications, for example. However, many of the ecosystem services and emotional affects that lawns do provide are likely to be impacted or negated in synthetic turf, including loss of habitat, possible impacts on soil respiration, soil and air temperatures, drainage, and pollution (Francis, 2018). Many of these impacts will be localised around the artificial lawn itself, but with sufficient uptake, impacts will become more widespread and cumulative.

The third generation of synthetic turf creates the potential for realistic artificial lawns that meet cultural expectations of a good lawn to be laid in domestic outdoor spaces. In many ways, they are designed specifically to exceed requirements to stimulate consumers to upgrade to artificial grasses; as to be more appealing they have to be superior to turfgrass. In relation to Weigert's (1994) 'status theory', artificial lawns address the 'semiotics of appearances' (p. 83) most specifically, either by suppling the desired criteria or negating their relevance, particularly in regard to the messy maintenance of a living system. They present an ecological simulacrum (see Baudrillard 1994; Francis, 2018) of a culturally-determined ecosystem while removing the biota that originally defined it. The living thing has been exchanged for its sterile, simulated representation.

This absence of the living does mean that not all cultural aspects of the lawn are addressed by synthetic grass; the simulated form is, after all, only superficial. Visual and haptic aspects of the lawns may be satisfactory, but olfactory and auditory experiences may in turn be

compromised. Though such aspects tend not to be uppermost in considerations of outdoor domestic space, it would be a mistake to downplay the wellbeing benefits that the smells and sounds that the biota of gardens and lawns provide (Rhind 2014; Hedblom et al. 2017). The 'soft fascination' (Cerwén et al. 2016) of socio-nature may become further removed as the lawn user is increasingly distanced from wildlife (Lorimer 2016). Ultimately, artificial lawns validate social norms but act in opposition to life, and perhaps this is the greatest concern, and defining aspect, of such ecological simulacra (Francis 2018). Weigert (1994) posited traditional lawns as examples of culture opposing life in their exclusion of native weeds as species out of place, and as indicators that "[a]ssumptions that [life and culture] are mutually supportive… must be reinterpreted" (p. 82). Synthetic grass and artificial lawns are an extension of this expression of culture at the expense of nonhuman life, and flow counter to emerging concerns about how best to live convivially and empathetically with nonhumans in more-than-human spaces (Franklin, 2017).

Researching Artificial Lawn People

In order to research artificial lawn people, we were confronted by the challenge of locating and sampling early adopters and other interested parties of what in the UK is an emerging cultural phenomenon (Beck, 2018). A series of assumptions constrained our approach. Firstly, identifying artificial lawn people to interview or survey was deemed unrealistic. Only households with publicly visible artificial lawns could be identified and uptake is so sparse as to make visual surveys via transects or other sampling techniques inefficient. Secondly, we rejected the notion of working through an artificial grass retailer, because of concerns over freedom of information and the bias of the sample towards happy customers, who it is assumed would be more likely to engage in research (Graeff and Harmon, 2002). Thirdly, to understand the wider cultural perceptions of artificial lawn people we wanted to interrogate the perspectives of other people who were considering artificial grass, or who decided against the synthetic material, as well as those who held opposing views, including neighbours dissatisfied rather than impressed with the choices of adjacent artificial lawn people. This led us to identify online discussion forums as the most accessible and unmediated source for discourse and debate sounding the cultures of artificial lawns.

We selected www.mumsnet.com, because it is one of the UK's most popular online hosts of discussion forums (The Economist 2017). Mumsnet discussions are publicly visible without registration. Originally established in 2000 as a website for parents, users now discuss a wide range of topics stretching well beyond domestic issues. Importantly we decided not to select a specialist gardening website, because it was assumed that a host such as mumsnet would offer a more neutral public space for discussion, whereas specialist websites such as www.gardenerscorner.co.uk and www.mygarden.rhs.org are constrained by the social norms of devoted gardeners. As one mumsnet poster commented 'I'm not a neat and tidy garden lover'. After preliminary scoping research to select appropriate search terms we undertook a search for the term 'artificial grass'[1] and sorted the results by relevance. We then reviewed the top 50 discussion boards and eliminated discussions of artificial grass for indoor and non-domestic applications, other off-topic discussions, and those boards with fewer than three posts. This yielded a sample of 35 discussions, with 948 unique posts and a total of 59,138 words of discussion, covering a period from 2006 to 2018. The median number of posts per board was 14, but one board had 424 posts. This popular board had transcended niche interest and featured extensive and animated discussion of the environmental impacts of artificial grass which particular informs the analysis in section iii. The discussion boards were downloaded to a Word file and manually coded. Within this sample we reached a point of saturation with the reoccurrence of major themes in the data (Davies, 2014). All posts that are quoted are anonymised of any identifying data (e.g. age, occupation, location).

Online discussion gave people a relatively safe space for expression (Langer and Beckman, 2005). An opponent of artificial lawns felt that they 'wouldn't insult someone's choice to them' but was liberated to speak freely online; whereas an artificial lawn owner wished to preserve anonymity and was 'attempting not to out myself'. An opponent of artificial grass was frank about the freedom that remote online discussion afforded: 'I would never say to someone in real life that I think their fake lawn is tacky and bad for the environment but on an anonymous thread where the op [original post: the user generated prompt for

[1] https://www.mumsnet.com/info/search?q=artificial+grass on 13.03.2018

discussion] has specifically asked the question? I don't think it's unreasonable to say "yes, I don't like it".' A contributor to the forum with 424 posts commented that there was 'so much judgement on this thread' highlighting the heated debate enabled by an online forum. The engaged poly-vocality demonstrated is the sort of culturally-rich material that researchers endeavour to establish in mediated face-to-face focus groups, with often disappointing results (Stewart and Shamdasani 2014). Such comments illustrate the benefit of the netnography methodology in obtaining unmediated opinions, although the counterpoint is that discussion posts can be artificial and disingenuous. Internet forums have been shown to be places of bullying (Bouchard 2016), and mumsnet has attracted criticism for the use of expletives (The Economist, 2017), which featured prominently in the heated discussion of artificial grass. Agent provocateurs my lurk online, accumulating knowledge of an online community before 'trolling' them by making unsolicited and/or deliberately controversial comments to disrupt, aggravate and lure participants into arguments for their own amusement, rendering these artificial spaces unsafe and producing disingenuous posts (Coles and West 2016). As these discussions were in the public domain and not initiated by us as researchers the comments do have the advantage of being independent and unprompted, whereas in other forms of active primary social research participants are known to perform to the researchers (Cloke et al. 2004). The sample may be biased towards heavy internet users and specifically parents (especially mothers) seeking advice, whereas certain groups who lack access to the internet will be unrepresented from the self-selecting sample (Behe et al. 2013).

The Preoccupations of Artificial Lawn People

Our inductive reading of the discussion posts led us to infer three important topics that preoccupy artificial lawn people and their consorts: i) emotional responses, ii) bio-physical affects and iii) environmental values. Each of these topics has figured prominently in previous work on the lawn as a cultural form that has developed out of *Lawn People*. As well as being an important text for the emerging sub-discipline of urban political ecology (Loftus, 2012; Heynen 2014), Robbins' 2007 publication directly spurred further valuable cultural analysis of the lawn, including by Harris et al. (2013) and Mustafa et al. (2010).

Firstly, the theme of emotional responses framed Harris et al.'s work on suburban yard management practices in Boston, Massachusetts. Their work follows the emotional turn in geography and allied disciplines whereby researchers rethought the connections between people and things, between subjects and objects (Ahmed, 2004; Bennett 2009; Lorimer 2008). Robbins (2007) painted a picture of an anxious and guilty lawn person, whereas Harris et al. reposition emotions as drivers as well as outcomes in lawn decisions. Emotions are important in garden management and are complex and diverse; 'even when yards appeared homogenous, the homeowners' emotional engagements with their yards expressed considerable heterogeneity' (2008, p351). Emotions worked to create collectives of shared yard management in Boston resulting in ubiquitous turfgrass. In the UK this arrangement is being materially challenged, albeit on a limited scale, by artificial grass. Moreover, it is emotionally challenging for new (or potential) artificial lawn people to disrupt and break a collective ecology.

Secondly, artificial lawn people are challenging preconceptions of what makes a good lawn and producing a new urban political ecology. Plastic grass is a vibrant matter that has wider affects (Bennett, 2009). They are changing their bio-physical relations with living organisms, both non-human as well as human. Indeed, in most cases the artificial lawn will be situated within a wider garden space, containing plants and soils that will support at least transitory use by domestic and wild animals. Synthetic grass blades need cleaning to ensure they do not present an unpleasant odour once 'contaminated' by life, whether through detritus blown in by the wind, from defecation or from other sources. It becomes a medium for bacteria that provoke disgust and raises concerns among garden users. Outside of the immediate materiality of the synthetic grass, the lack of 'life' associated with artificial lawns may also compromise their recreational utility, at least in the sense of engaging with the outdoors. The chemical properties also provoke fears of their carcinogenic potential, mirroring concerns of Robbins' lawn people over the side-effects of input of nutrient supplements and pest control substances.

Thirdly, the environmental impacts of artificial lawns at neighbourhood and global scales are debates that recall the concern Mustafa et al. (2010) explored among 'xeriscape people' of

St Petersburg, Florida. Xeriscaping using drought resistant plant species emerged in water-deficient regions of the US as an alternative to traditional high-input lawns. The xeriscapers displayed their cultural capital by planting species requiring little water, energy or chemical inputs and performed on an environmentalist register at an imagined global scale, whereas at the neighbourhood and national scales there was opposition to non-turfgrass ground cover, which broke from collective management practices. Similar multi-scalar contested environmental values and the associated cultural politics stemming from artificial lawn adoption (or resistance) are discussed in our final section of analysis.

i) Emotional responses to artificial grass

One conclusion we soon drew is that artificial grass is polarising and many of the sample held emotionally strong opposing positions. Multiple discussions were initiated by original posts that shared a dilemma concerning if they should install artificial grass (or remove it from a new home) and seeking opinions, as these titles illustrate: 'Artificial grass naff or a godsend?', 'Artificial grass – hit or miss?' and 'To dig up the bloody lawn and replace it with AstroTurf?'. Original posts initiated often heated debate. As one poster astutely observed 'I'd imagine it is a bit like marmite' (Marmite is a dark brown yeast extract food paste that notoriously divides British public opinion). To provide an overall picture of the sample, a tally of positive and negative opinions across all 948 of the posts revealed 186 (19.6%) in favour of artificial grass versus 157 (16.6%) against, with the remainder being questions, observations, neutral opinions, advice, technical discussions and other issues. It would be an ecological fallacy to assume this in anyway quantifies the divide in British public opinion, as it is a self-selecting sample of people who are engaging in a public debate, but it does suggest that there are widely held positions for and against the use of artificial grass.

Critical posters found it 'awful' 'naff' 'super weird' and even 'gross'. Some could not face the thought of it ('I couldn't put the fake stuff down') and felt that it was an affront to established gardening practices: 'you have to treat it like carpet'. The opinions against artificial grass represented the orthodox of traditional turfgrass lawn people and a desire to

maintain the collective neighbourhood appearances (Harris et al. 2013). As one disgruntled lawn person complained: 'Our neighbours have one, it looks ridiculously bright and very obviously fake; I'd be disappointed if I was them' and another felt that a nearby home 'Looks like a green grocers display'. There were further concerns about the absence of the haptic, olfactory and auditory cues that turfgrass affords in addition to an unsatisfactory visual experience. Environmental considerations framed some of the most entrenched opposition, reflecting biophilic tendencies and situating some posts within wider concerns about loss of habitat, as well as negative impacts on the posters' environmentally-sensitive identities: 'I would miss the smell and feel of the real thing, but I am concerned about it as it destroys habitats for the local wildlife'. Critics included those who could not face becoming artificial lawn people after moving in to a property where it was installed 'We had it in our old house… Got rid really quickly… I'm glad you're getting rid! It so bad for the environment ☺'. While another user had deep regrets. They installed it in their 'swamp' of a back garden and were very dissatisfied: 'I hate it. I absolutely Hate **hate** *hate* the look. I am busy overcompensating by planting loads and loads of container plants.'

The opinions of the most enthusiastic proponents of artificial lawns were as ardent as the opponents, which included 'I LOVE it', 'It's bliss', 'a dream' and 'the best thing I ever did in the garden'. Robbins (2007) raises a concern about the obligation that lawn maintenance places upon people. For some reluctant gardeners artificial lawns offered a welcome release from the routines of maintaining a homogeneous living lawn. It also removed some of the material problems of turfgrass including the transport of mud into the home. Artificial grass was advantageous because it: 'Looks good, no hayfever, great for children, no lawnmowing'. Utility was an important factor for stimulating the decision to become an artificial lawn person, many of whom were busy parents with young children: 'It's fantastic! The garden is useable 365 days a year.' The positive responses were nuanced and not unambiguous. A pattern emerged from the discussion with a consensus among proponents that it was important that the 'right type' of artificial lawn was used. This was key in forming a positive identity, as a good artificial lawn person was one that was realising the simulation of turfgrass in the right way and producing a good version of a traditional lawn. This normally meant installing synthetic grass in small gardens and selecting expensive high-quality material that was as close as possible to being a visual simulation of the idealised form of

turfgrass lawn. Here, for instance, are two contrasting opinions based on high and low-price products: 'It cost twice what we thought it would but is lovely!!' and 'It doesn't look good but I think it's the cheaper stuff'. Synthetic materials that provided an authentic replication of turfgrass were highly valued: 'It has a fine texture and is brown mixed with green so it looks more real.' These observations demonstrate that there are particular socially constructed expectations associated with being a good artificial lawn person and that the attributes of the non-living grass were important for forming identity.

ii) Bio-physical affects

For those mumsnet contributors unfamiliar with the materiality of polyethylene grasses, the most intriguing aspect was the new relationships forged between non-living artificial lawns and living objects: children, wild and domestic animals, their urine and the bacteria in their faeces; dead leaves and other organic debris, and weeds. Artificial lawn people established new cleaning regimes to tackle various forms of dirt. Generally artificial lawns represented a low maintenance solution, although the primary concern was cleaning animal waste and the associated risks to human health posed by bacteria. Emotions of fear and disgust are common in mediating environmental interactions (Bixler and Floyd, 1997), and it is unsurprising that this stood out as artificial lawn people negotiated new relationships and tested the emergence of new acceptable behaviours. This was the dedicated topic of four of the discussion boards and featured prominently elsewhere. Various methods of removal and cleaning using detergents, water hoses and other means were discussed among artificial lawn people, including the 'do nothing' approach and allowing animal waste to infiltrate the permeable matting. Synthetic fibres were even considered superior to turfgrass by some artificial lawn people in terms of offering a stable material, where the homogeneous appearance was impervious to urine stains and easy to clean: 'No more yellow patches from dog wee, easy to pick up dog muck and disinfect'. Most artificial users were satisfied with their cleaning methods. Meanwhile, those resistant to artificial lawns expressed anxiety, which included fears over letting their children play on neighbours' artificial lawns even after they had been cleaned of visible animal waste.

Secondary was the problem of removing dead leaves and other plant matter. For artificial lawn people this task was relatively simple using a brush, specialist leaf vacuum or a standard household vacuum appliance, yet among proponents and opponents alike the new regimes were novel and disquieting as they were outside of established norms of domestic practice (Shove 2003). 'I am reminded of a friend of my dad who used to be out on his fake lawn with a Hoover while everyone else was mowing!' Such practices drew unwanted social attention: '…hoover it and feel like a total idiot.' Becoming an artificial lawn person, was a means of avoiding some of the onerous responsibilities of turfgrass maintenance, but sometimes the outcome was unsatisfactory. For one lawn person the neighbour's artificial lawn provided a source of condescending amusement: 'And because he didn't clean it properly it now has weeds growing in it. How we laughed'. Owning an artificial lawn ultimately meant a battle against entropy. One prescient observation was that 'Admittedly after 8 or 10 years or so it looks a bit tired'. Rather than being a permanent solution to the cultural problem of lawn maintenance polythene blades represented a temporary fix. Artificial lawn people would have to purchase a new lawn at considerable economic cost and were supporting a growing industry. Prices quoted in the discussions ranged between £16 and £50 per square meter or £200 to £20,000 for a garden, with a typical cost of £4,000 for a new or replacement artificial lawn.

A key motivation for installing artificial grass was to provide a durable and safe playing surface for children; an important concern for many gardeners (Clayton, 2007). Synthetic materials were well regarded in terms of their robustness and the comfortable environment they afforded for play, but there were further anxieties common to both users and non-users about safety for children. A relatively minor issue in Britain (at the moment), but one that may hamper the spread of artificial lawns in warmer climates, is the over-heating of the material in summer 'when it was really warm weather last summer [25+ degrees centigrade] we had to put picnic blankets down.' More serious, yet less immediately apparent, were fears over possible carcinogenic effects of artificial lawn materials. A high profile case of leukaemia associated with artificial turf football pitches in the Netherlands resulted in the removal of 300 pitches, which catalysed debate on discussion boards (Wells, 2016). As one concerned parent wrote: 'The links between crumb rubber and cancers have already been noted. It's not for me'. Research elsewhere has explored the risks, which lie beyond the

scope of this article, particularly as a diverse range of artificial grass products may have different chemical attributes (Zhang et al., 2008). But our research demonstrates that the perceived risk was influencing some decision-making processes. Robbins (2007) explored how the uses of chemical inputs created anxieties among lawn people about risks to human health, and that the cultural imperative to maintain a turfgrass lawn was more persuasive in influencing the actions of gardeners than their uncertain knowledge of the chemicals' carcinogenic potential. A different set of anxieties associated with an unfamiliar material and the unknown long-term health implications surround the adoption of artificial lawns, but artificial lawn people also reconcile these ambiguities in their pursuit of an appropriate 'good' lawn.

iii) Environmental values

The environmental impacts of artificial lawns were discussed at two distinct scales; the local neighbourhood and globally. At the neighbourhood scale, debates again touched on biophilic and ecological concerns, revolving around the negative effects of artificial lawns on local birds, worms, bees and other organisms. One opponent was relieved not to have encountered them in their community, because 'the locals obviously have better taste and a decent conscience' with regard to wildlife; an observation perhaps reflecting concerns over the potential erosion of an environmentally-conscious community identity. Underpinning some of the negative environmental perceptions were socio-economic interests. The perceived lack of care and attention required of artificial lawn people was a proxy for poor citizenship and thus contributed to an undesirable image of the neighbourhood and had a potential impact upon house prices. A prospective house buyer felt 'When looking at houses it was a real turn off'. In essence, people who were not good turfgrass lawn people did not make good neighbours (Mustafa et al. 2010). In contrast, artificial lawn people were defensive and drew attention to the limited scale of their garden and the negative effect associated with other turfgrass alternatives such as decking, paving, unmanaged land as well as low quality turfgrass: 'I don't see how a dismal mud patch is superior in any way to a few square meters of (good) fake grass'.

555 At a global scale the market for alternatives to turfgrass lawn has been shaped by
556 environmental change (Mustafa et al. 2010). Artificial lawn retailers and manufacturers
557 highlight that synthetic replacements require a reduced input of water, energy, pesticides
558 and chemical supplements alongside little domestic labour. One way in which they draw
559 attention to these attributes is by positioning artificial grass as an appropriate response to
560 anthropogenic climate change: 'UK garden lawns battle extreme weather patterns as a
561 result of rising global temperatures... A fake lawn offers a year-round solution, as well
562 as valuable maintenance savings for your pocket, your planet and your time.' (Easigrass,
563 2018). At the individual household scale artificial grass may represent a rational (and
564 pseudo-sustainable) adaptive response to a changing climate, but absent from such
565 marketing narratives is the broader negative environmental effects of polythene
566 manufacture, disposal and subsequent replacement (as frequently as every 8 years). At
567 greater scales the cumulative effect of widespread artificial grass adoption would
568 potentially be very damaging.
569
570 However, the arguments of retailers resonated among some of our sample who
571 championed the environmental 'benefits' of artificial materials and who expressed the
572 opinion that synthetic lawns were less harmful than well-maintained living lawns: 'petrol
573 mowers, fertiliser and sprinklers are not being kinder to the environment than someone
574 with plastic grass and a broom' and 'How is it bad for the environment, my garden no longer
575 floods… I'm no longer using weed killer… Oh it's got rid of most of the snails and slugs so my
576 flower bed and pots are growing flowers and fruit'. This second poster recognised 'the
577 environment' to be a particular manicured form of socio-nature devoid of weeds, snails and
578 slugs. Contested public understanding of 'the environment' contributed to the debate
579 (Carter, 2001). Some artificial lawn people argued that it was not such a bad environmental
580 choice in comparison to established lawn practices: ''real' grass is a monoculture and not
581 particularly good for wildlife either' and 'unless you all have natural meadow and don't even
582 "garden" then it's a bit hypocritical.' Such arguments reflected a position commonly held
583 among artificial lawn people that their choices were an expression of rationality and
584 innovation whereas resistance to artificial grass was unreasonably conservative. For them
585 the environmental values of opposing lawn people served as a veil to hide behind, which
586 concealed a resistance to modernisation: 'fake lawns are new and people tend to complain

about something new initially as if it's the harbinger of doom. 50 years ago people were doing the same about washing machines or cars. I bet the majority of people who are citing the environmental woe of fake grass have both.'

Some spirited arguments came from the artificial lawn people, but the environmental counterpoints that emerged were expressed with greater vigour. Opponents of artificial lawns were quick to highlight the wider environmental costs: 'Artificial grass is massively bad for the environment, in manufacture, in laying and in the prevention of growing of plants, and movements of insects and animals'. It aroused intense feelings: 'It is a catastrophe' and 'I despair a little about the human race when we feel the need to carpet outdoors'. The emerging trend was equated with dystopian futures and the landscapes inhabited by characters from popular fiction such as the 'Lorax' and 'Wall-E' and an identikit 'Lego environment'. In contrast occasional discussions of more ecologically diverse living plant landscapes that could replace turfgrass lawns e.g. meadow landscapes, ground ivy, and mixed species grasses, occasionally arose within the artificial grass forums.

Even some committed artificial lawn people were self-aware of the broader impacts of their decisions to install a synthetic material, and of those some went on to justify their lawn choice by highlighting other garden features: 'The downsides are obviously the environmental. We've put raised beds in and done lots of planting to try to offset it...' or other positive environmental contributions in their broader cultural lives. There were also rebuttals of lawn people's reification of turfgrass. One artificial grass person found their attitudes condescending and hypocritical: 'Those using bad for the environment are you using peddle bikes to produce your electric for daily showers and recycling your water, I could go on.'

This last point is indicative of a broader sense of self-confidence among many artificial lawn people. Occasionally they reacted aggressively to criticism about their gardens, starkly illustrating the difficult choices that encompass becoming an artificial lawn person and taking the opportunity to fully express themselves on an anonymous online discussion board: 'I don't get on with anyone. I am a horrid, selfish person who doesn't give a shit about anything or anyone. BUT I have a nice garden I can actually spend time in now. By

myself. That suits me just fine.' A minority of artificial lawn people even expressed provocative anti-environmental views ('I say fuck the insects') in the defence of what they saw as their individual choice for their private gardens. In becoming an artificial lawn person, they had adopted what Don Mitchell (2005) identified as the persona of the 'purely atomic' individual who exerts their right to be left alone and act as they wish in both public and private spaces.

Conclusion: Artificial Lawns as 'Synthetic Nature'

Neighbourhood environmental politics is being transformed by new artificial products and debated in new public realms. As such, research needs to be attentive to these emerging dynamics and the emotionally affective landscapes that are produced. We have determined that domestic use of synthetic grass is a polarising, emotionally charged issue. All of the discussion board participants have independently acted to publicly debate the value of turfgrass and artificial lawns, showing that they care about their neighbourhood environments. The new landscapes that are being produced are vitally important as spaces of recreation; there are concerns for human and nonhuman health and impacts upon aesthetics and property values. Our argument presented here is different to Robbins' work on lawn people (2007); rather than artificial lawns 'producing' artificial lawn people we argue our evidence demonstrates that artificial lawn owners implicitly identify as artificial lawn people and in tandem opponents of artificial lawns reinforce their identities as 'good lawn' people. This is not to say that artificial lawn people are not subjected *a la* Robbins, but that to investigate this would require further work on how artificial lawn people become subjects of an ideology (Althusser, 1971). This could be better achieved through more intensive methods and fieldwork in artificial grass landscapes with consumers. Our work showcases both the opportunities and limits associated with a netnography. It empirically illustrates the emotional importance of domestic lawns through extensive and engaged polyvocal debate, and shows that personal experiences of micro-scale environmental changes can fire great concerns. Our netnography demonstrates how environmental politics can be researched through such new methodologies and away from the physical landscapes being debated. Yet the other side of the coin is that the often abstract and decontextualized

651 discussion and the complete anonymity of the voices limits the insights that can be
652 developed into a further understanding of the ideologies underpinning artificial lawn
653 peoples' behaviours and identities.
654
655 The deep roots of turfgrass lawns stem from a Northern European representation of the
656 ways in which the prehistorical wilderness, tamed, reshaped and remade since the forest
657 clearances and agricultural development of the Neolithic, has been ultimately mastered in
658 the industrial age. Lawns have become one of the most culturally embedded visual
659 representations of the Anthropocene (Castree 2018). Turfgrasses appear as timeless,
660 appropriate and inevitable ground cover sustained through social behaviours in accordance
661 with established cultural practices (Robbins, 2007). Artificial lawns present a departure from
662 modern regimes of lawn management and disrupt existing socio-communal bonds. Here we
663 do not make any teleological assumption that artificial lawns will increase with time, but
664 rather that the behaviours of lawn people will fluidly adjust to cultural norms, living and
665 non-living objects, and changing physical environments (Bennett 2009). Through this article
666 we have used the language of proponents and opponents of artificial lawns, drawing from
667 the consistent binary divisions in the online discussions. Yet such a dialectic is unsatisfactory
668 as artificial lawn people are really a sub-category of lawn people. They do not exist in
669 opposition to the traditional lawn form, but instead embody the fluid relationships between
670 different materials and people: between objects and subjects. What emerges from these
671 emotional perspectives is an obvious desire across both opponents and proponents for an
672 idealised lawn that has the associated traditional, culturally embedded, values of a perfect
673 turfgrass lawn (Weigert 1994), yet a polarisation in opinion as to whether the use of
674 synthetic materials is an acceptable means of achieving a domestic garden that resembles
675 such an ideal. Artificial lawn people are trying to create '*a* good lawn'. The synthetic lawn
676 meets (most of the) cultural expectations of a 'good' lawn – green, uniform, neat – more
677 effectively than a real lawn ever could, but what is contested is if the social, economic and
678 environmental costs of this simulation are worth paying. In this sense both groups were
679 adhering to a broader ideology of good citizenship.
680
681 Most opponents of artificial lawns in our sample favour the living turfgrass 'good lawn', but
682 there was a second category that were more sensitive to environmentalism and ecological

683 diversity. Indeed, opponents fell into the same two sub-categories that Feagan and
684 Ripmeester (2001) identified. On the one hand those lawn people wanting to grow the
685 perfect turfgrass lawn and on the other people attempting to create more ecologically
686 meaningful habitat (see also Mustafa et al. 2010). The former privilege the maintenance of
687 the status quo and in particular are invested in the perceived collective neighbourhood
688 economic, and narrowly defined environmental, benefits of a community of good turfgrass
689 lawns (Robbins, 2007). The latter are preoccupied by environmental degradation and
690 ecological diversity at various scales from the local to the global and although they may be
691 sceptical of the turfgrass lawn as a habitat, and in a few instances advocate its replacement
692 with other living plants, they perceive the artificial lawn to be a dangerous further
693 downgrading of urban habitats. These concerns are even shared by some artificial lawn
694 people who populate their gardens with additional living plants to 'compensate' for their
695 sterile lawns.
696
697 Artificial lawns represent a replacement of a living form with a non-living synthetic
698 substitute that occupies the same cultural niche but, in some way, exceeds the original
699 organic form, it is the creation of a socio-nature based on the synthetic or more concisely a
700 'synthetic nature'. There is nothing new or novel in this *per se*. In such a regard it is similar
701 to the widespread use of other synthetic materials, like textiles yarns including acrylics and
702 polyesters that have replaced cottons, wools and other 'natural fibres', the proliferation of
703 plastics and composites in place of wood in furniture and other construction materials, and
704 the use of plastic flowers in interior decorating. What sets the artificial lawn apart from
705 these products of industrial capitalism is that a living rather than a dead material is
706 replaced. And yet as our research illustrated some of the greatest anxieties arise from the
707 ways in which this non-living material is not aseptic nor proven to be benign. Artificial grass
708 interacts with other forms of life: children at play, dogs defecating, transient insects and
709 birds, weeds, leaves, bacteria and humus. In such a regard further theorising of the cultural
710 importance of artificial lawns may draw lessons from the emotional responses to other
711 forms of 'synthetic nature' such as artificial meats and the plastic techno-fossils that mark
712 the geological record (Sexton, 2016; Zalasiewi, 2016). Further work on new forms of
713 synthetic nature will destabilise the boundaries between living and non-living and

714 contribute to the debates that unsettle modern understanding of the apartness of
715 humankind and the bio-physical world (Haraway 2015; Lorimer, 2017).
716
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